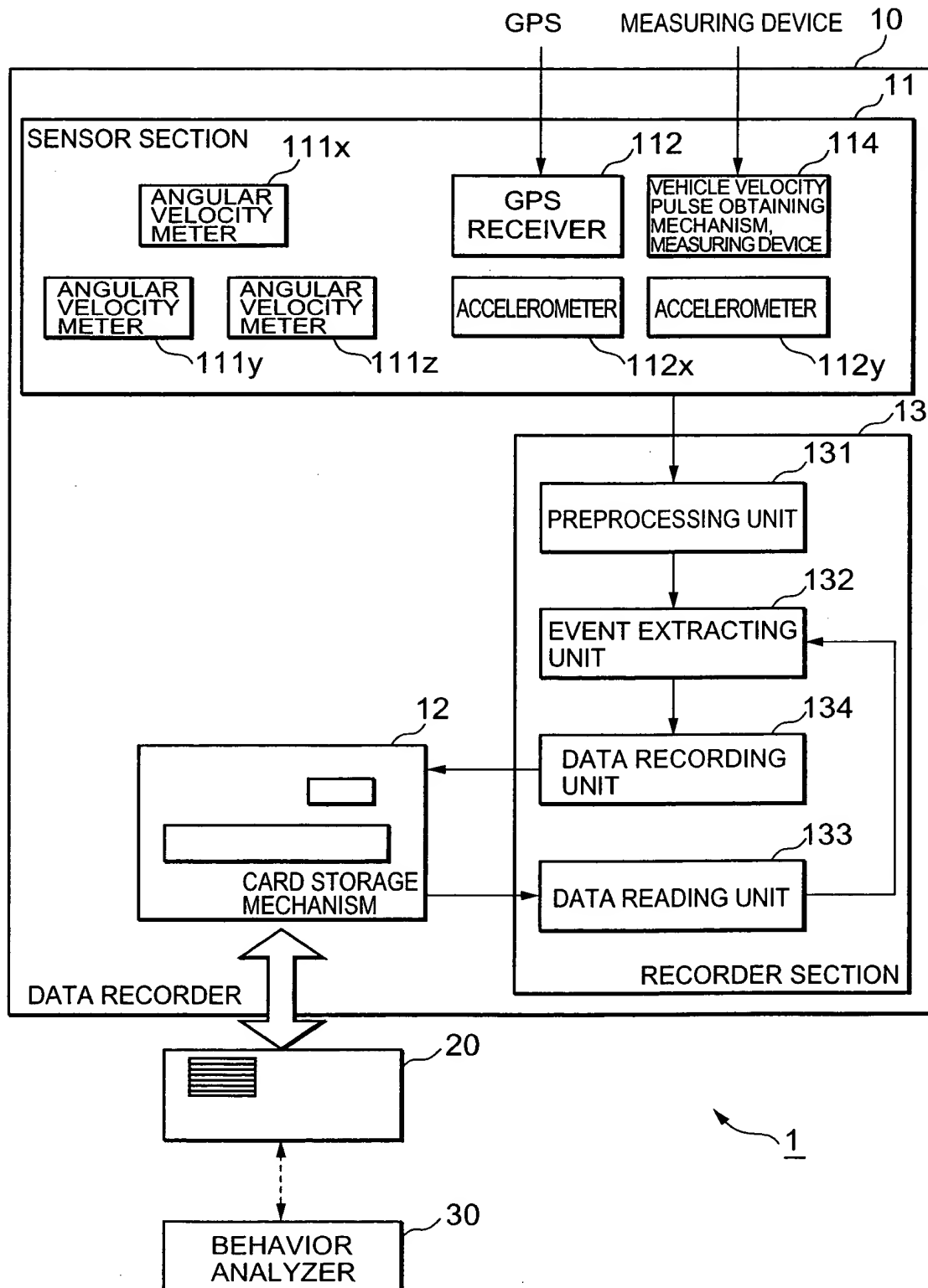


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FIG.1



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FIG.2

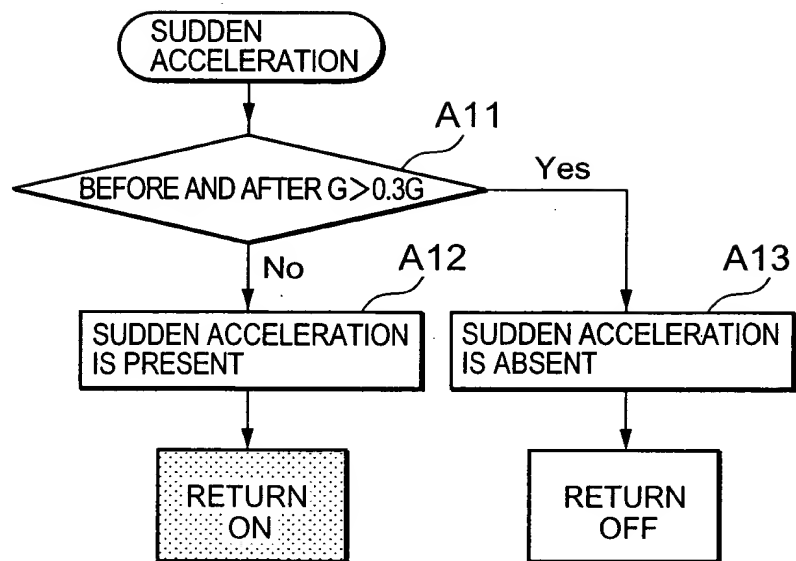


FIG.3

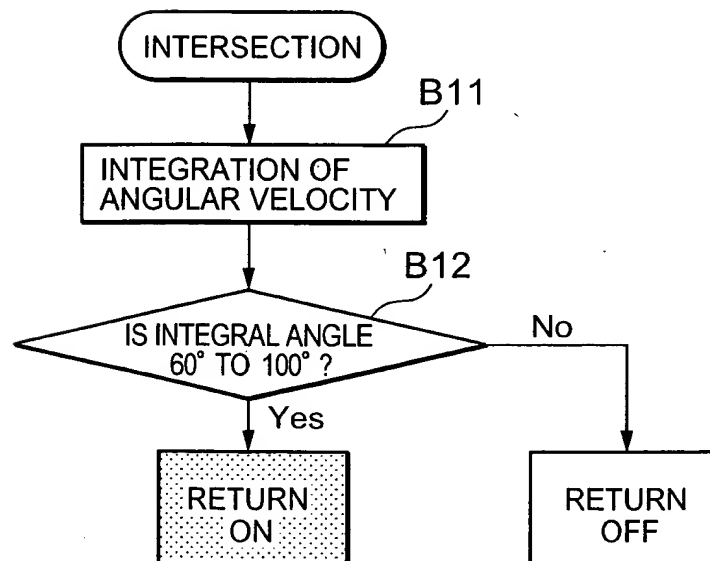


FIG.4

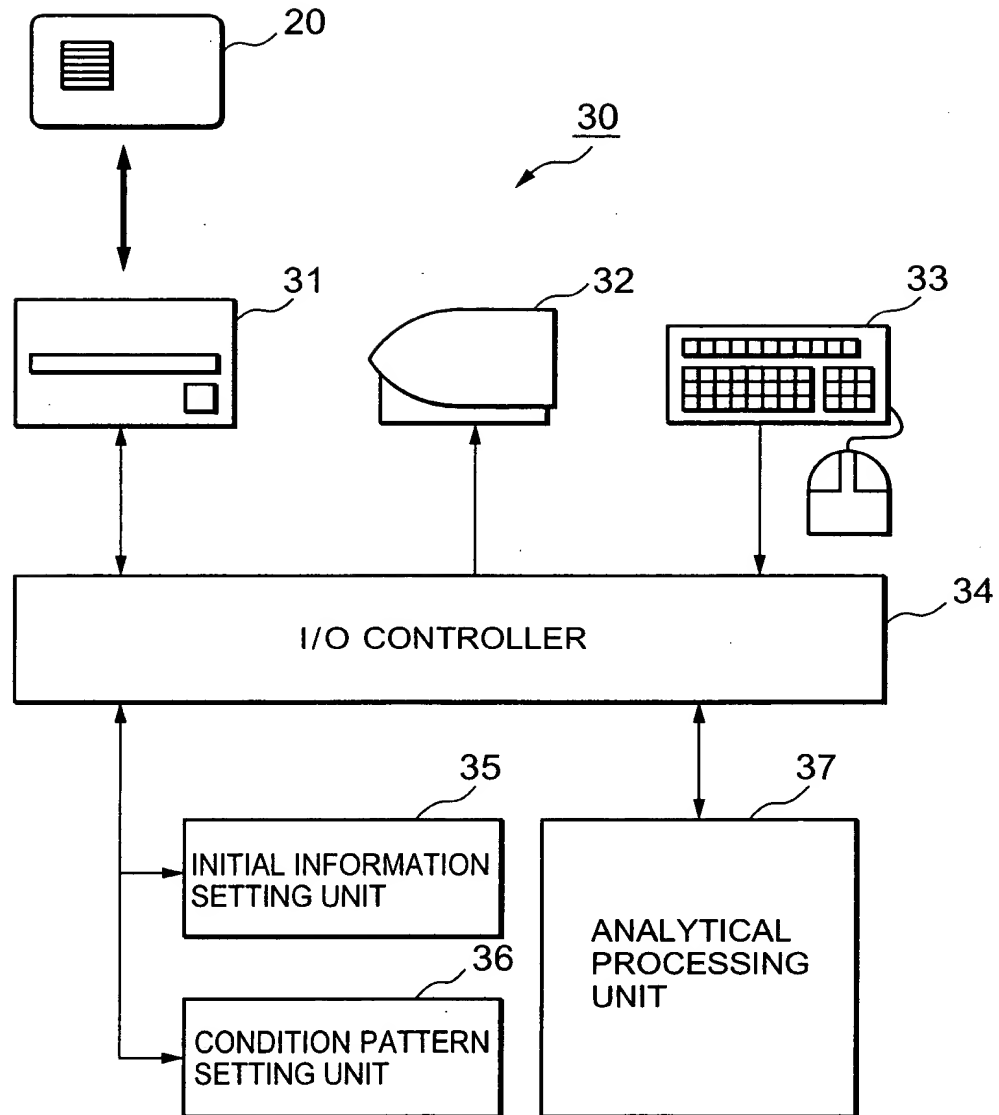


FIG.5

INITIAL SETTING		
KIND OF VEHICLE	DATA TECH	
DRIVER	ONO OHO	
VEHICLE VELOCITY PULSE SCALE FACTOR	400	mm
COLLECTING INTERVAL	30	SECONDS
DRIVING DISTANCE AT COLLECTING INTERVAL	520	cm
EVENT RECORDING TIME	30	SECONDS
FORWARD	30	SECONDS
BACKWARD	30	SECONDS
THE MAXIMUM NUMBER OF TIMES OF EVENTS	255	TIMES

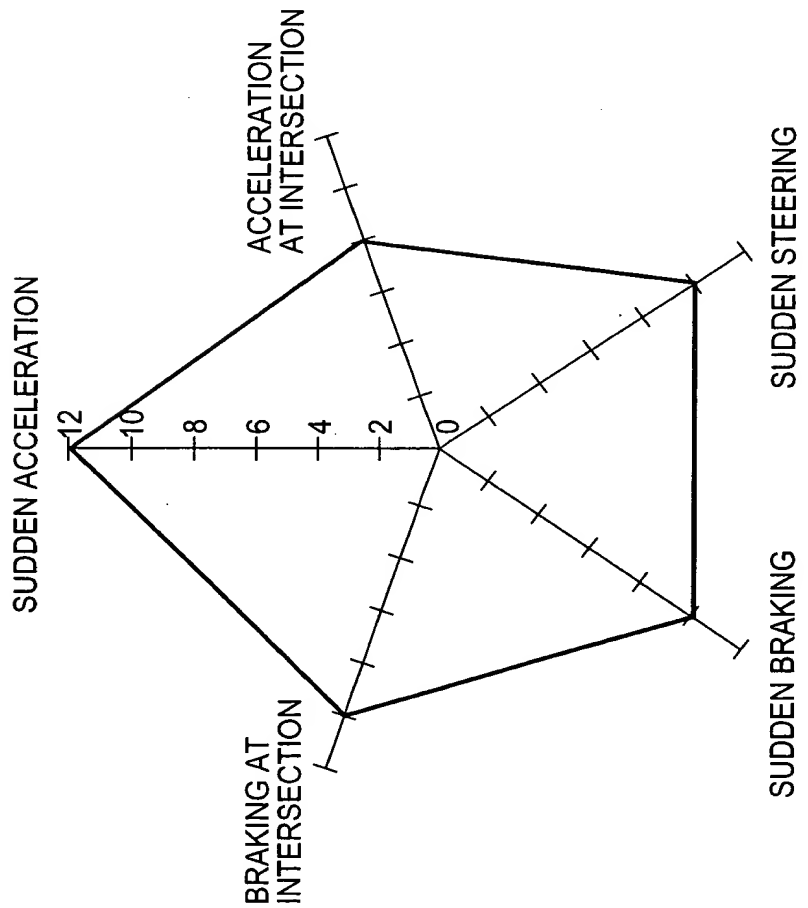
FIG.6

CHARACTERISTIC BEHAVIOR	
SUDDEN ACCELERATION	
SUDDEN ACCELERATION OF	0.35 G OR MORE FROM STOP STATE
TURN AT INTERSECTION	
RANGE FROM	60° TO 100°

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FIG.7

DRIVING ESTIMATION GRAPH



DATE	1998.10.12
DRIVER	ONOOHO
VEHICLE IDENTIFICATION	DATA TECH
DRIVING LOCATION	NEAR KAMATA

START TIME	END TIME
35.56079865	35.56091690
139.71965027	139.71925354

COLLECTION TABLE BY DANGEROUS BEHAVIOR		
SUDDEN ACCELERATION	12 TIMES	DETAILED INFORMATION
BRAKING AT INTERSECTION	10 TIMES	DETAILED INFORMATION
ACCELERATION AT INTERSECTION	8 TIMES	DETAILED INFORMATION
SUDDEN STEERING	10 TIMES	DETAILED INFORMATION
SUDDEN BRAKING	10 TIMES	DETAILED INFORMATION

FIG.8A

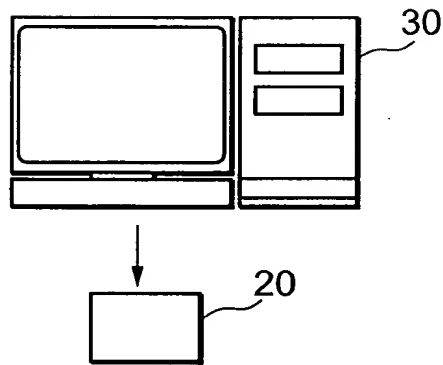


FIG.8B

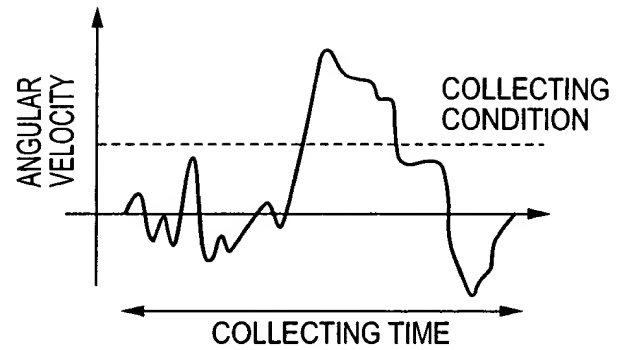


FIG.9

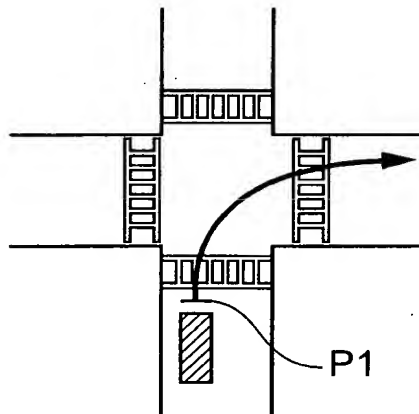


FIG.10A

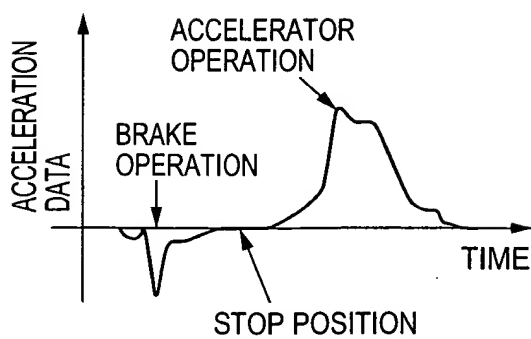
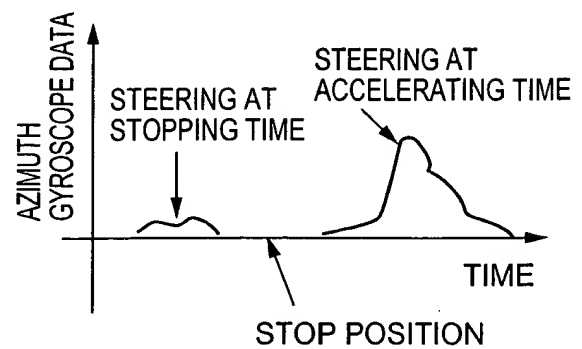


FIG.10B



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FIG.11

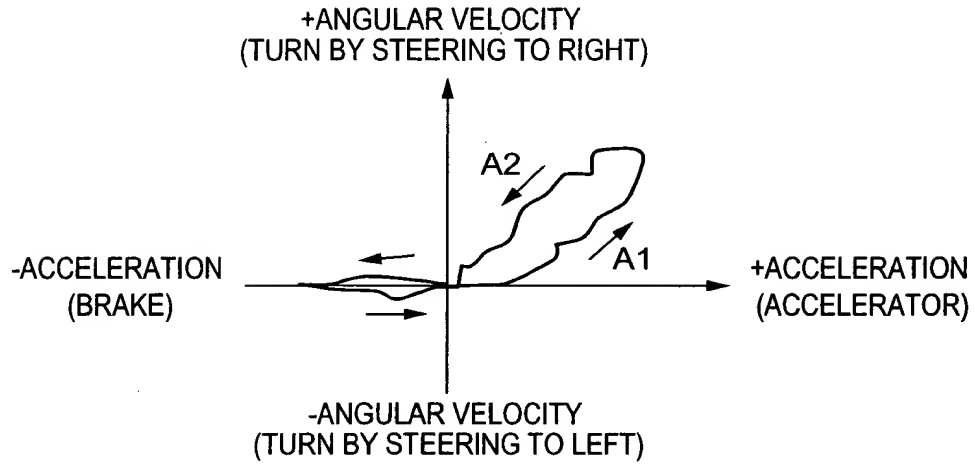


FIG.12A

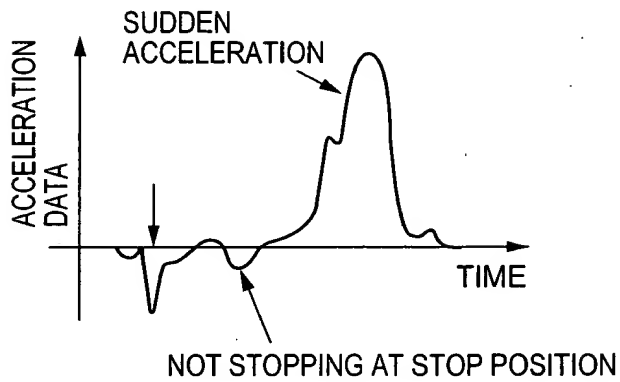


FIG.12B

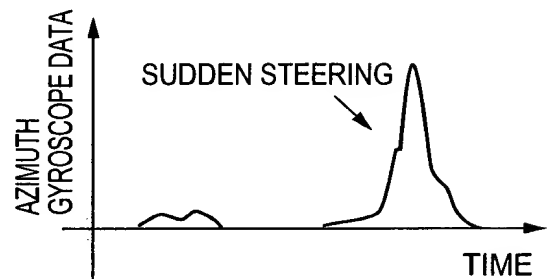


FIG.13

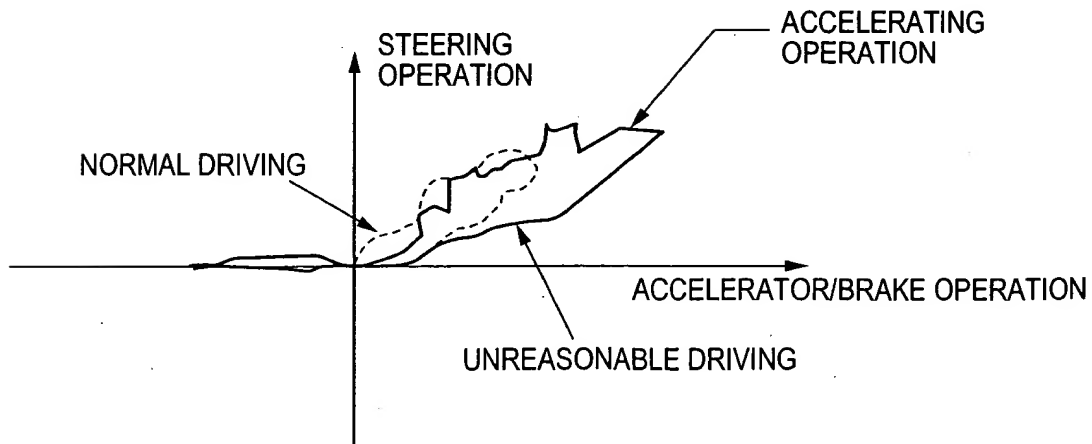


FIG.14

	VALUE OF ACCELERATION	ANGULAR VELOCITY	STOP	RISE
NORMAL CURVE OPERATION	ABOUT 0.2G	20° /SEC, TURN CURVE AT 4.5 SEC.	COMPLETELY STOP	ACCELERATION IS GENTLY GENERATED
UNREASONABLE CURVE OPERATION	ACCELERATION OF 0.3G OR MORE	30° /SEC, TURN CURVE WITHIN 3 SEC.	ACCELERATION IS GENERATED AND NO COMPLETE STOP OCCURS	HIGH ACCELERATION IS SUDDEN GENERATED

FIG.15

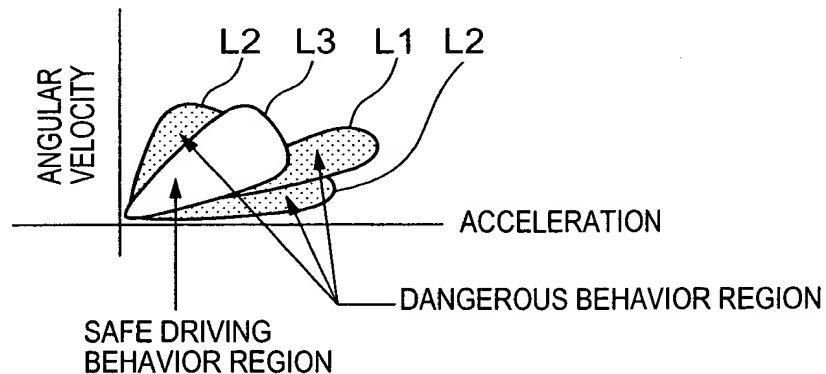
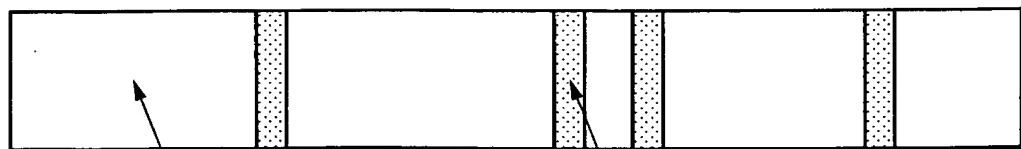


FIG.16

COLLECTING DATA

STATISTICAL DATA
FOR ONE MINUTE

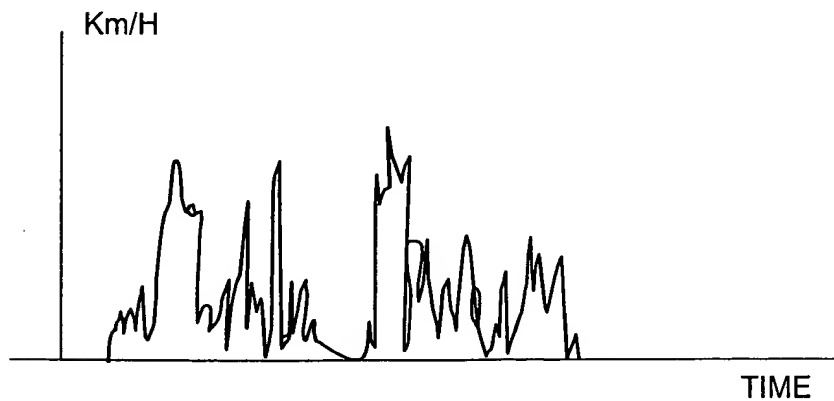
COLLECTING CONDITION DATA

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FIG.17

COLLECTING DATA	EXPLANATION
MAXIMUM VELOCITY	MAXIMUM VELOCITY IS STORED AMONG VELOCITY FOR ONE MINUTE. THE CHARACTERISTIC OF DRIVER'S BEHAVIOR IS EXPRESSED BY MAXIMUM DATA.
AVERAGE VELOCITY	AVERAGE IS COLLECTED AS COMPARISON OF MAXIMUM VELOCITY
PLUS MAXIMUM ACCELERATION (FOR ANALYZING ACCELERATION)	MAXIMUM ACCELERATION IS COLLECTED WITHOUT BEING LIMITED TO THE PATTERN OF DRIVER'S DRIVING BEHAVIOR.
MINUS MAXIMUM ACCELERATION (FOR ANALYZING ACCELERATION)	THE SAME
PLUS MAXIMUM ANGULAR VELOCITY (FOR ANALYZING TURN BY STEERING TO RIGHT)	MAXIMUM TURN STEERING OPERATION IS COLLECTED WITHOUT BEING LIMITED TO THE CURVE DRIVING.
MINUS MAXIMUM ANGULAR VELOCITY (FOR ANALYZING TURN BY STEERING TO LEFT)	THE SAME
PLUS MAXIMUM LATERAL ACCELERATION (ACCELERATION WHEN TURNING BY STEERING TO RIGHT)	CENTRIFUGAL FORCE WHEN TURNING, ROLL ANGLE (DETECTION OF ROLLOVER IN CASE OF OVERLOAD)
MINUS MAXIMUM LATERAL ACCELERATION (ACCELERATION WHEN TURNING BY STEERING TO LEFT)	THE SAME
POSITION AND TIME USING GPS	HISTORY AND TIME OF OPERATION PATH BASED ON POSITION AND TIME EVERY ONE MINUTE

FIG.18



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FIG.19

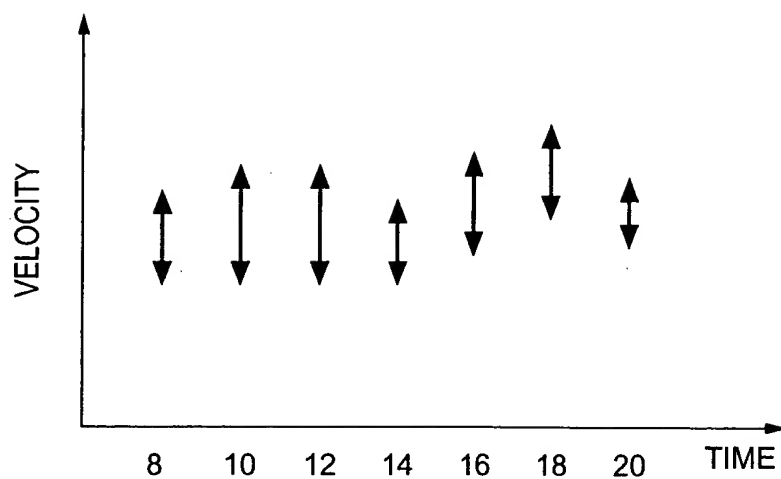


FIG.20

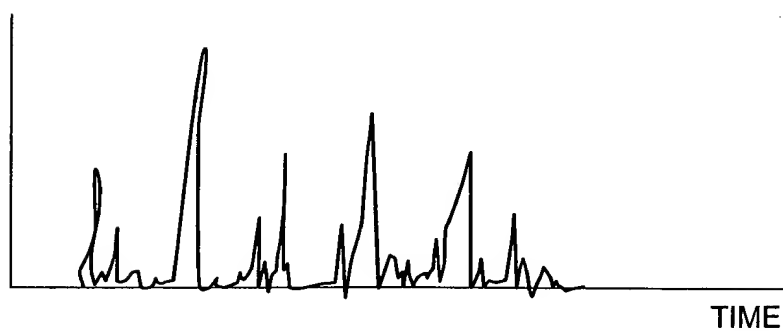
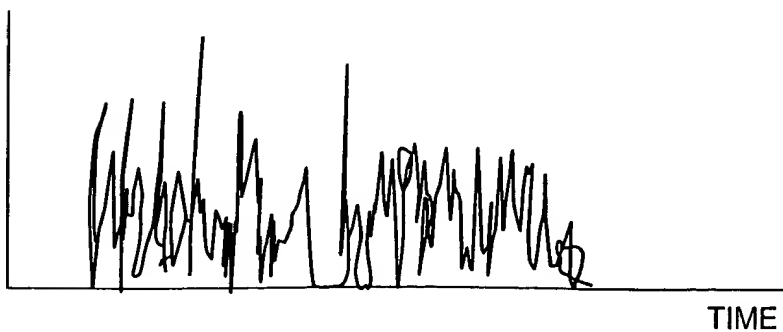


FIG.21



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FIG.22

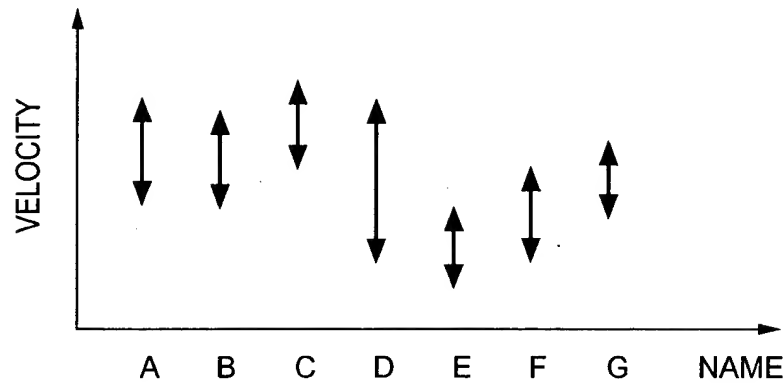


FIG.23

RELATIONSHIP OF SIGNAL	MAXIMUM ANGULAR VELOCITY—ACCELERATION	MAXIMUM ACCELERATION—ANGULAR VELOCITY	MAXIMUM ACCELERATION—VELOCITY	MAXIMUM LATERAL ACCELERATION—DEGREE / ANGULAR VELOCITY
MEASURING DEVICE	ACCELEROMETER—GYROSCOPE	ACCELEROMETER—GYROSCOPE	VEHICLE PULSE—ACCELEROMETER	GYROSCOPE—ACCELEROMETER
EXPLANATION	① DRIVING PATTERN AT CURVE ② STOP PATTERN AT CURVE ③ START WITH TURNING ④ STOP WITH TURNING	THE RELATIONSHIP OF ACCELERATION WHEN THE MAXIMUM ANGULAR VELOCITY OCCURS, NAMELY, THE VALUES OF THE COMPLEX ACCELERATION AND BRAKING WHILE TURNING ARE ESTIMATED.	EVEN IF THE ACCELERATION GENERATED BY THE SAME BRAKING IS USED, -0.1G WHERE THE ACCELERATION IS 10 KM AND -0.1G WHERE THE ACCELERATION IS 100 KM ARE DIFFERENT FROM EACH OTHER. ACCORDINGLY, THE DEGREE OF DANGER IS DIFFERENT DEPENDING ON THE VELOCITY EVEN IF THE SAME BRAKING OPERATION IS PERFORMED.	CENTRIFUGAL FORCE = VELOCITY × ANGULAR VELOCITY IN THE NORMAL DRIVING, CENTRIFUGAL FORCE = LATERAL ACCELERATION IS ESTABLISHED. HOWEVER, IF A SLIP OR ROLL OCCURS BEYOND THE DRIVING LIMIT, CENTRIFUGAL FORCE ≠ LATERAL ACCELERATION IS ESTABLISHED. THE DEGREE OF DANGER IS DETERMINED BASED ON THE VALUE OF THE DIFFERENCE.

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FIG.24

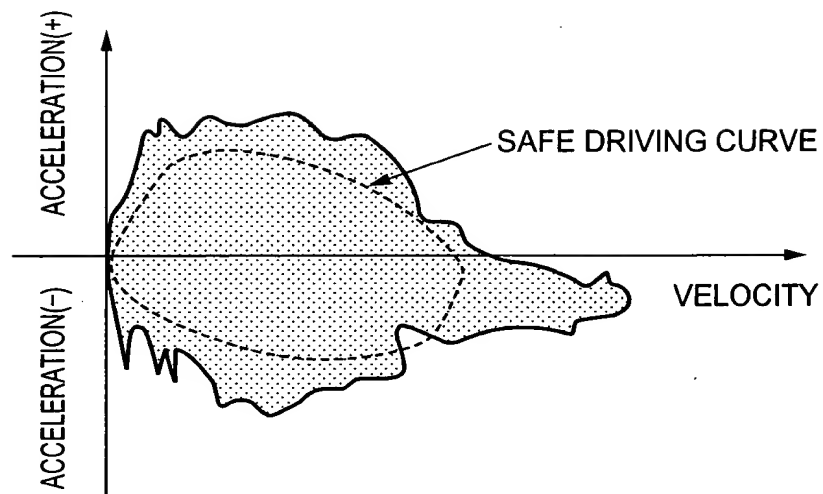


FIG.25

